



WasteWi\$e Update

WASTE
WI\$E



A Fresh Look at Packaging

Welcome to the second issue of the WasteWi\$e Update!

To keep you better informed of waste reduction activities in the business community, each issue of the *Update* will be devoted to a comprehensive review of a single waste reduction topic.

This issue focuses on **packaging reductions**, a critical issue for many companies interested in preventing waste and cutting costs.

INSIDE:

- WasteWi\$e Endorsers
- Packaging Reductions
- Resources
- Reusable Shipping Containers
- Peer Exchange
- Packaging Goals



Program of Champions: WasteWi\$e Endorsers

To build on the initial success of WasteWi\$e, EPA recently kicked off an expansion of the program to send the waste reduction message to even more businesses. Through the WasteWi\$e Endorser Program, initiated in December 1994, EPA will partner with trade associations and other organizations to champion WasteWi\$e and waste reduction to their member businesses. Because these organizations provide an excellent communication link with their members, EPA also will be able to better understand businesses' waste reduction needs. Twenty-five trade and professional associations have signed on as WasteWi\$e Charter Endorsers.

Endorsers commit to conducting activities of their choice in two areas. First, they provide information to their members about WasteWi\$e. Second, after the initial membership drive, they continue to promote WasteWi\$e to their members, or to provide them with technical information on waste reduction. For example, Endorsers could co-sponsor WasteWi\$e workshops, publish waste reduction tips and cost-savings examples in their newsletters or trade journals, develop an awards program, or present WasteWi\$e information at conferences. EPA will help Endorsers implement these activities and will provide recognition for their efforts.

By taking a few simple actions, Endorser organizations have already encouraged many companies to join WasteWi\$e. Their actions show the type of activities other Endorsers can conduct under the program. Examples include:

Edison Electric Institute invited EPA to speak about WasteWi\$e at its Environment and Energy Committee Meeting. EEI represents 180 electric utilities. More than 20 utility companies have already joined WasteWi\$e. EEI will also send a package of WasteWi\$e information to its members, encouraging more of them to join the program.

American Textile Manufacturers Institute is recommending that companies join WasteWi\$e to fulfill a requirement in its "Encouraging Environmental Excellence Program" to participate in voluntary programs.

Direct Marketing Association, Inc. (DMA), launched a Corporate Environmental Stewardship Challenge last year, which supports EPA's WasteWi\$e program. Over 35 DMA member companies have already joined WasteWi\$e, and DMA will continue to promote WasteWi\$e to its members.

EPA welcomes the WasteWi\$e Charter Endorsers listed below. We thank them for their support and look forward to working together to spread the message of cost-effective waste reduction to many more businesses. For more information about the WasteWi\$e Endorser Program, call 1-800-EPA-WISE.

WasteWi\$e Charter Endorsers

- American Iron and Steel Institute
- American Plastics Council
- American Textile Manufacturers Institute
- Association of Ohio Recyclers
- The Business and Institutional Furniture Manufacturer's Association
- Direct Marketing Association, Inc.
- Edison Electric Institute
- Electronic Industries Association
- Food Marketing Institute
- Foodservice and Packaging Institute
- The Glass Packaging Institute
- Grocery Manufacturers of America
- Institute of Packaging Professionals
- National Association for Environmental Management
- National Association of Photographic Manufacturers, Inc.
- National Automobile Dealers Association
- National Retail Federation
- National Soft Drink Association
- National Wooden Pallet and Container Association
- Newspaper Association of America
- Polystyrene Packaging Council
- Steel Manufacturers Association
- Steel Recycling Institute
- The Vinyl Institute
- Virginia Recycling Association

WasteWi\$e Peer Exchange

EPA has set up a WasteWi\$e Peer Exchange to help WasteWi\$e companies contact each other directly to share information on their waste reduction efforts. Companies are invited both to provide and to receive information via the Exchange. If you are a WasteWi\$e partner with successful waste reduction experience and would like to offer information to other businesses, call the Hotline at 1-800-EPA-WISE. Companies looking for information also can call the Hotline. You can ask to be hooked up with a business that has made the switch to reusable packaging, is buying products with recycled content, or is accomplishing many other kinds of waste reduction.

A Fresh Look at Packaging

Single-use transportation packaging and product packaging—which includes everything from wood pallets to plastic wrapping—contributes significantly to the amount of waste companies generate. Manufacturing, assembling, shipping, and disposing of this packaging can increase the cost of doing business. Of course, packaging serves many vital functions, including containing, protecting, preserving, and advertising products. Sometimes, however, long-held production and marketing practices specify the use of more packaging than is actually needed to serve these functions.

Recognizing this, many companies—even those with thriving recycling programs—are taking a second look at the transportation and product packaging they send and receive. More firms are setting up in-house teams and working with their suppliers to eliminate excess packaging and switch to reusable packaging. And they're finding that waste reduction can be achieved without sacrificing product safety or quality. In fact, the production improvements associated with switching to reusable packaging and eliminating excess packaging can not only slash waste disposal and purchasing costs, but can often help streamline companies' work practices. In addition, reusable shipping containers often cost less to use over the long term and do a better job of safeguarding their contents.

In this issue, we take an in-depth look at the packaging reduction efforts of two WasteWi\$e charter partners: Target Stores and State Farm Mutual Automobile Insurance Company. We examine how their programs came about, some of the issues they faced, and payoffs they realized from their successful efforts. We also review the major reductions that consumer product manufacturers can achieve when they trim product packaging, and summarize a recent report about the factors that have made reusable transport packaging a big success for some companies.



Target Waste Reduction Program Hits the Mark

In just one year's time, Target Stores has eliminated approximately 1.5 million pounds of waste and saved an estimated \$4.5 million by initiating a packaging reduction program for its "softlines" merchandise (which includes such items as clothing and shoes). Target Stores is a national chain of over 600 retail stores headquartered in Minneapolis, Minnesota.

By developing a team and carefully evaluating its packaging needs, Target realized that much of the packaging used by its vendors was unnecessary and costly to use and dispose of. When the Target Team approached vendors about reducing excess packaging, it was surprised to learn that vendor packaging choices were based upon what vendors thought Target wanted. This began a very constructive dialogue and process in which Target and its vendors worked together to design specifications to eliminate excess packaging. Driven by its success so far, Target has set a goal to become "trashless" in its softlines merchandise by 1996.

Starting From the Top

Suspecting that much of the merchandise shipped to Target included excess packaging, top management chartered a team of about 20 employees to study packaging of the softlines merchandise. The team came from several different areas, including the Environmental, Quality Assurance, Distribution, Operations, and Special Projects departments.

Team members spent many hours in the stockrooms of several stores in the Minneapolis metropolitan area going through shipments to examine how the merchandise was packaged. They observed both the amount of waste from packaging and the time workers spent opening and unwrapping shipments.

The team found that a great deal of labor was expended tearing apart packaging for the softlines merchandise. For example, one typical clothing shipment contained 20 indi-

vidually wrapped sweaters. The sweaters had to be unwrapped before they could be displayed in the store. The team ultimately determined that an entire shipment of 20 sweaters could be safely shipped in just one outside wrapper.

The total reduction in packaging for the Target softlines merchandise resulted in \$4.5 million savings in labor costs associated with unwrapping the merchandise, and has prevented 1.5 million pounds of excess packaging from being landfilled—all in just one year. Another benefit was an estimated \$3 million savings to the vendor for the reduced packaging material used in shipments.

Changing Specs, Changing Ways

Old paradigms die hard," according to Mary Ellen Cassman, Director of Quality Assurance and Guest Relations at Target. Two vendors and two buyers doubted that the packaging changes would be effective. They thought that the clothing would arrive wrinkled because of the reduced packaging and make the merchandise unpresentable.

To see whether the merchandise would arrive at the store in good condition, the Target Team asked its vendors to test its packaging reduction idea. After several shipments of clothing arrived unwrinkled and presentable, the team decided to change Target's packaging specifications to the vendor.

"We proved the skeptics wrong by doing several test runs. There has been no loss of sales due to presentation," explains Cassman. The team had to convince management that these test runs were important, as management wanted to implement the team's suggestions more quickly. "We wanted to make sure the job was done right!"

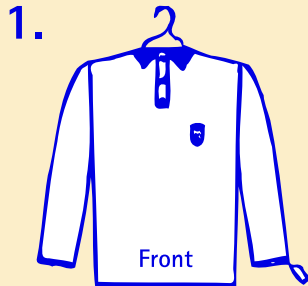
The resulting specifications, drawn up by Target and its vendors, exclude not only individually wrapped items but also tissue paper, cardboard inserts, pins, collar inserts, tape, and clips (see box).

To ensure that vendors follow these specifications, Target asked them to sign a letter of agreement. Under the agreement, Target can fine the vendors if merchandise does not arrive according to the specifications. "If sweaters arrive individually wrapped, we will charge the vendor for the additional labor it takes us to open the excess packaging," explains Jim Bosch, Manager of Target's Environmental Department.

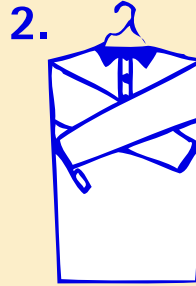
Knit and Woven Tops, Sweaters, Jackets, Vests, Outerwear Packing Specifications - Hanging Presentation

Target's objective is to ship floor-ready apparel and minimize packing. This will reduce costs and handling both for vendors and Target. This will also provide significant environmental benefits.

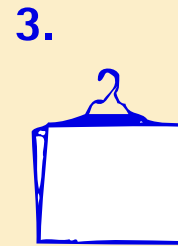
This spec is intended for use on ALL FABRIC TYPES of hanging knit and woven shirts, including t-shirts, fleece, turtlenecks, cowlnecks, henleys, sweaters, baseball shirts, camp shirts, long and short sleeve styles, outerwear, jackets, and vests.



Lay garment front side facing up. Insert Target-approved hanger when specifically requested.



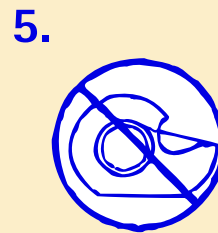
Fold sleeves across front of garment. Note: Hangtag should be visible. Attach at left side of sleeve opening.



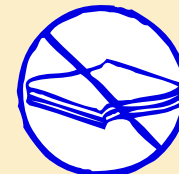
Fold hem up to shoulders. Note: Vests should lay flat or fold in half.



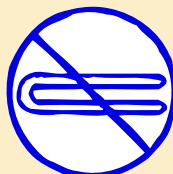
Pack inner casepack quantity in one polybag or use plastic lined cardboard boxes.



No tape



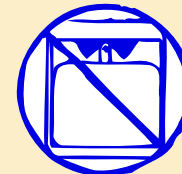
No tissue



No clips



No pins



No individual polybags

A sample of Target's new packing specifications that were distributed to all vendors.

Becoming Trashless

Target's current goal is "to ship floor-ready apparel and minimize excess packaging." "Floor-ready" means that the merchandise requires minimal preparation before being displayed on the sales floor.

Target chose this goal because it would reduce labor and disposal costs for both Target and the manufacturer while providing significant environmental benefits. Target's goal to become "trashless" by 1996 includes eliminating all unnecessary packaging as well as reusing the necessary packaging.

Target's advice for other companies that are considering initiating this type of program is to begin studying packaging needs immediately. Companies should ask themselves two questions: 1) Is each packaging component necessary for shipping? and 2) Does each component help significantly in the presentation or

protection of the product? If the answer to these questions is no, then eliminate or reduce the packaging. Another hint on how companies can reduce their packaging is to work collaboratively with vendors—communicate precisely what kinds of packaging your company needs and does not need. You might find that vendors think you require all the packaging they are delivering, even though this might not be the case. Target found that having vendors as partners was a key to its success.

Target contributors to this article were:

Mahrokh Baniani, Senior Industrial Engineer

Jim Bosch, Manager, Environmental Department

Mary Ellen Cassman, Director, Quality Assurance and Guest Relations

Mark D. Swanson, Special Projects Department

Insuring Packaging Reduction at State Farm

The State Farm Mutual Automobile Insurance Company has learned that seemingly small changes in the way it does business can yield large rewards. The company has embarked on an ambitious packaging reduction program that is cutting waste, saving money, and improving efficiency for State Farm's headquarters, regional offices, and independent agents. One reason for the program's success is that it embodies a team approach, involving all departments in waste reduction efforts.

Packaging Reductions

State Farm's headquarters in Bloomington, Illinois, provides a variety of support services for its 28 regional offices. These services include purchasing and shipping supplies to the regional offices, as well as producing and distributing printed materials such as applications, billing notices, training materials, and operating forms. The regional offices then distribute these supplies and materials to independent agents and claims offices within each region.

State Farm has a wide-ranging packaging reduction program (see box). In one effort, the Purchasing Department worked with a supplier to change the way printer and copier paper was packaged and shipped to State Farm. In the past, paper was shipped in individually wrapped reams of 500 sheets. Now, the paper is transported in corrugated containers holding 2,500 sheets (the maximum capacity of the company's high-speed, high-volume printers and copiers).

This simple packaging change eliminates 240,000 ream wraps and prevents the generation of six tons of waste annually. The switch also increases production efficiency, because less time is needed to reload and service copiers and printers. Although State Farm has not calculated its precise cost savings, the company has recognized a 30 percent increase in efficiency.

While waste reduction and improved efficiency were expected payoffs, State Farm found an additional benefit in this packaging switch. The new containers in which the paper was shipped turned out to be a convenient size for sending items to the regional offices.



State Farm's paper no longer arrives in individually wrapped reams.

State Farm's paper supplier also has benefitted from the change. The supplier has been able to cut raw material and transportation costs. Consequently, it has implemented similar packaging reductions with some of its other customers.

Another way that State Farm has reduced packaging is by eliminating shrinkwrap when mailing the company's sales handbooks to agents. State Farm used to ship each handbook in both shrinkwrap and a corrugated book wrap. Now State Farm just uses the book wrap. This action eliminated close to 100,000 shrinkwraps, saving \$18,000 annually. This simple change, which increases efficiency by saving time unwrapping handbooks, only took a few days to implement.

State Farm's packaging reduction program encourages all employees to think creatively and take the initiative on packaging reductions, according to Jean Schmidt, a senior purchasing specialist and a member of State Farm's Waste Management Committee. "Let's take the scenario of a buyer requesting packages of 25 forms," says Schmidt. "An employee might suggest shipping in lots of 100 forms per shrinkwrapped package instead of 25. That way, we save shrinkwrap, eliminate the chipboard used to support the smaller shipments, and reduce the labor necessary

State Farm has implemented a number of activities aimed at reducing packaging, including:

- ◆ Working with suppliers to receive more durable and reusable pallets.
- ◆ Reusing polystyrene packing material received by employees.
- ◆ Reusing corrugated containers received in the mail.
- ◆ Participating in a local business materials exchange.
- ◆ Using reusable plastic totes to transport materials to regional offices.
- ◆ Reusing paper roll ends from printing as packaging fill.
- ◆ Using recyclable paper wraps.
- ◆ Shipping and receiving electronics equipment in durable, reusable packing boxes and reusing foam packing materials.

to prepare the package.” Once such an effective change in purchasing practices has been identified, the Purchasing Department communicates the changes in ordering procedures to the authorizing department, independent State Farm offices, and all employees.

The Waste Management Committee: A Catalyst for Change

State Farm attributes much of its success in waste reduction to its team approach. The company has established a Waste Management Committee that recommends, establishes, communicates, and implements waste reduction programs throughout the organization. The Committee, formed in 1989, comprises members from seven key departments: 1) Purchasing, 2) Data Processing, 3) Corporate Law, 4) Audio/Visual, 5) Corporate Administrative Services, 6) Regional Office Administrative Services, and 7) Safety & Environmental Health Unit.

Committee members are responsible for communicating waste reduction ideas and programs to and from their respective departments. The 15 Committee members meet every other month at the Bloomington headquarters. The minutes from the meetings are then sent via e-mail to each of the regional offices.

The Waste Management Committee works closely with different departments to investigate and implement possible waste reduction measures. For example, to achieve the packaging reduction described previously for copier and printer paper, the Committee worked closely with State Farm's Purchasing Department to examine possible alternatives to the five-ream shipments. Once the larger shipments were successfully tested, the Committee and the department worked together to sell the switch to management and employees.

Goals of State Farm's Waste Management Committee

- ◆ Work with the purchasing department to investigate opportunities to buy recycled.
- ◆ Act as a source for information.
- ◆ Develop educational materials.
- ◆ Provide communication through existing company materials.
- ◆ Explore new recycling and waste prevention approaches.

The Challenge of Employee Education

According to members of the Waste Management Committee, the biggest challenge State Farm faced when initiating its packaging reduction efforts was educating employees. The initial emphasis of the Committee's educational program was on teaching employees about recycling. With a strong employee awareness of recycling in place, the Committee now focuses on the benefits of waste prevention, including cutting transportation packaging and paper use.

The Committee also keeps employees updated on State Farm's environmental achievements through a variety of avenues, including articles in newsletters, presentations at employee training sessions, poster displays, and slide presentations. Providing employees with feedback on waste reduction progress helps to recognize employees' contributions, ensure their continued participation, and provide motivation for future activities. "The education process reaches everyone involved in waste reduction, from administrative personnel to purchasing specialists and upper managers," explains Schmidt. Additionally, purchasing and waste management specialists periodically attend seminars sponsored by trade associations to learn about alternative waste prevention practices.

Advice for Others

State Farm's successes illustrate how other companies can develop a team strategy to tap the benefits associated with packaging reduction efforts. According to Dean Shoemaker, Safety Technician from the Safety & Environmental Health Unit, implementing the overall waste management approach at State Farm was a "learn-as-you-go" process. Companies should be flexible as they begin implementing ideas, and should tailor them to their specific circumstances. Shoemaker's best advice for other companies interested in reducing packaging waste is to "dive in and get your feet wet."

State Farm attributes the success of its packaging reduction efforts to:

- ◆ Obtaining upper management support and showing them the cost savings.
- ◆ Applying a comprehensive approach to waste management and establishing a Waste Management Committee representing all departments involved.
- ◆ Providing ongoing employee education to improve environmental awareness.
- ◆ Working closely with the end users of a product to assess their needs.
- ◆ Building long-term relationships between suppliers and the central purchasing department.

State Farm contributors to this article were:

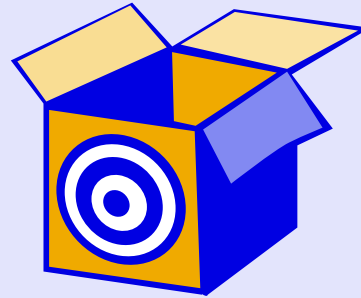
David Burke, Public Affairs Department

Dan Norris, Specialist, Safety & Environmental Health Unit

Jean Schmidt, Senior Purchasing Specialist II, Purchasing Unit

Dean Shoemaker, Safety Technician, Safety & Environmental Health Unit

A Sampling of WasteWi\$e Packaging Goals



Many WasteWi\$e partners have ranked packaging reduction high on their lists of waste reduction goals. Some of the strategies that WasteWi\$e partners are using to achieve their waste reduction goals are presented below. You could use these examples to begin targeting packaging reductions in your company.

Primary Packaging

Waste Prevention Goals

- ◆ Reduce the weight of plastic bottles by 10 percent for one product line.
- ◆ Redesign product packaging to decrease the amount of materials used.
- ◆ Purchase cafeteria food items in bulk containers.

Recycling Goals

- ◆ Recycle polypropylene shirt bags.
- ◆ Collect and bale high-density polyethylene (HDPE) to be used in packaging.
- ◆ Collect aluminum packaging from manufacturing.

Buy/Manufacture Recycled Goals

- ◆ Increase postconsumer content of packaging while meeting Food and Drug Administration guidelines.
- ◆ Initiate “closed loop” recycling of 35 mm film canisters with up to 12.5 percent postconsumer content.
- ◆ Expand use of 25 percent postconsumer content HDPE bottles from one product line to additional lines.

- ◆ Produce 16-ounce polyethylene terephthalate (PET) bottles with 35 percent postconsumer content.
- ◆ Purchase polypropylene shirt bags with recycled content.

Transport Packaging

Waste Prevention Goals

- ◆ Distribute one product line in reusable containers, which will reduce disposal weight by 95 percent.
- ◆ Use incoming packaging materials for outgoing product packaging.
- ◆ Establish preferred packaging guidelines for suppliers.
- ◆ Use air-filled bags in shipping cartons instead of foam “peanuts.”
- ◆ Reduce the thickness of corrugated used in packaging material.
- ◆ Require that routine customers develop a pallet return program to reuse pallets.
- ◆ Chip wooden pallets for animal bedding.

Recycling Goals

- ◆ Have packaging vendors use only one type of strapping material so that it can be more easily recycled.
- ◆ Accept packaging materials from customers to be recycled.
- ◆ Recycle customers’ low-density polyethylene (LDPE) stretch film.
- ◆ Send unusable wooden pallets to a compost facility.

Buy/Manufacture Recycled Goals

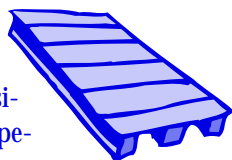
- ◆ Increase recycled content in corrugated containers.
- ◆ Set goal of 50 percent recycled content in all packaging.
- ◆ Evaluate the purchase of recycled-content wood pallets.
- ◆ Send plastic shrinkwrap to the manufacturer and buy back plastic containers made from that shrinkwrap (“closed-loop” purchasing).

Reducing Packaging at Every Step

Every part of the manufacturing process, from raw materials delivery to the transportation of products to customers, offers the potential for substantial packaging reductions. WasteWi\$e partners Pepsi-Cola Bottling of Phoenix, General Mills, Warner-Lambert, and Procter & Gamble are among the many companies that are taking advantage of these potential reductions. While these firms embarked on their programs for different reasons and focused on different parts of their production processes, all found that cost-effective reductions in packaging could be integrated quite successfully into product manufacturing and delivery systems.

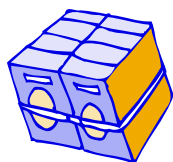
Reusable Pallets

Like every manufacturer, Pepsi-Cola Bottling of Phoenix experiences occasional production delays. In Pepsi-Phoenix's case, the culprit was often slightly damaged or misshapen wood pallets holding incoming shipments of empty cans. These pallets sometimes splintered during automated unloading, interrupting production and causing substantial raw material losses. The solution: reusable plastic pallets. Pepsi Phoenix worked with its supplier to identify and test the performance of possible replacements, settling on a design that worked for both parties. As a result, "Raw material losses resulting from pallet damage have fallen dramatically, labor to repair pallets for reuse has been reduced, and we have cut our generation of wood waste by over 50 percent," says Rick Kuelbs, Plant Manager at Pepsi Phoenix. "We are saving nearly \$3,000 per year on pallet cleaning and other secondary costs, and our downtime as a result of pallet problems has been reduced from about 10 hours per month to about half an hour per month."



Cereal Successes

Cereal giant General Mills used to ship its cereal boxes to retail customers in large corrugated cartons designed to hold 14 to 16 individual cereal boxes—until the company began focusing on ways



to provide more efficient packaging. The company redesigned the packaging to reduce the amount of corrugated, using plastic straps to hold the cereal boxes tightly between just two pieces of corrugated. The new design reduces the amount of corrugated by 30 percent, and grocers like it better because stock clerks find it easier to open containers without damaging the product. General Mills anticipates that these changes will reduce its generation of corrugated by around 3 million pounds per year.

Shrinking the Wrapping

Warner-Lambert, a manufacturer of health care and consumer products, has focused on minimizing the amount of packaging used for its products.

Recently, the company removed the outer paperboard cartons on a line of cold formula remedies, leaving only the shrinkwrapped bottle. This step alone is eliminating the generation of 340 tons of paperboard each year. Warner-Lambert also has reduced the weight and amount of packaging for a mouthwash product line, switching from a glass bottle with corrugated and paper overwrap to just a plastic bottle. This one change is eliminating over 19 million pounds of packaging per year, a 52 percent reduction.



Designing for Waste Prevention

For companies that ship millions of products every year, even small design changes can result in significant waste reductions. Just ask consumer products manufacturer Procter & Gamble (P&G). P&G wanted to redesign the plastic bottles used for its 32- and 48-ounce vegetable oil containers to cut down on the amount of plastic used. The company also wanted to find a way to reduce the product's storage space and shipping weight. It turned out that both goals could be met simply by replacing the traditional cylindrical shape of the oil bottle with a rectangular design. Changing the bottle's geometry allows a thinner layer of plastic to be used to deliver the same amount of oil. The resulting bottle uses 30 percent less plastic than before, eliminating about 2.5 million pounds of plastic per year. In addition, by reducing storage space, the bottle's new design requires smaller shipping containers for transportation. This has helped P&G cut its use of corrugated by about 1.3 million pounds annually.



Cutting Packaging Waste With Reusables

Single-use transportation packaging—mostly corrugated and paperboard containers—helps contain and protect products during shipping and handling. Such packaging also can generate large amounts of excess material.

A tremendous opportunity exists for companies to reduce packaging waste, according to *Delivering the Goods: Benefits of Reusable Shipping Containers*. This new report, developed by INFORM (a nonprofit environmental education and research organization), shows how businesses can cut back on waste—and save money—by converting to reusable shipping containers. In fact, many businesses have already taken this strategy to heart.

One of the biggest incentives for switching to reusables is cost savings. In its report, INFORM profiles several companies that have significantly cut costs by adopting reusable containers. Toyota USA, for example, reduced its freight costs by more than \$3 million annually by replacing single-use shipping containers with reusables.

INFORM's study shows that while a reusable shipping container has a higher initial price, it ends up costing significantly less per trip over a lifetime of trips.

Per-container savings are just part of the story. Businesses are finding that containers designed to endure multiple haulings are more protective of their contents. This means fewer damaged goods per shipment. In addition, well-designed containers can be easier to handle and store, freeing up workers and saving labor costs. Switching to reusables also reduces waste management costs.

But if reusable packaging is so lucrative, why haven't more businesses already made the switch? The answer lies in the challenges that must be overcome before these cost savings can be realized. First, companies must invest in a large number of reusable containers (which can cost from 2 to 20 times the price of single-use containers). A sufficient number of containers must be on hand to pack new deliveries while empty containers make their way back. Arrangements need to be made to return the emptied containers after shipment, possibly for a fee (though fees often can be negotiated with the supplier). In addition, companies will have to track their different containers to ensure they cycle their way back to the factory or warehouse. Once back in the warehouse, space must be made to store the containers until use.

Nevertheless, reusable-container programs can be cost-effective in many situations, and successful programs have been developed that reap the rewards of reuse. In particular, INFORM found four key factors that make reusable containers most cost-effective:

- **Short distribution distances.** By keeping hauling distances short, companies can minimize return-freight costs.
- **Frequent deliveries.** Smaller, more frequent product deliveries allow a company to move empty containers back to the factory rapidly. Frequent deliveries also minimize the number of containers a company must purchase.
- **Simplify the shipping process.** Some companies' shipments go through several layers of distributors before their products reach their final destinations. Companies that are able to simplify the shipping process—shipping directly to the buyer when possible—will be able to keep tracking costs down.
- **Company-owned vehicles.** When companies use their own trucks to move empty containers back to the factory, they avoid any return shipping fees levied by haulers.

Businesses have come up with other smart ideas to make sure that reusable containers save them money. Instead of buying containers, especially in cases where anticipated product alterations might require changes in container sizing, companies can lease them. The leasing firm typically takes on the task of tracking, handling, and hauling back empties, too.

Container standardization also can simplify working with reusables. If manufacturers and suppliers agree on a few container sizes, fewer types of containers need to be sorted and tracked. Companies can even swap containers at different points, eliminating the need to ship empty ones back.

Sample cost comparison of one-way and reusable two-cubic-foot shipping containers by material

	Corrugated One-Way	Corrugated Reusable	Plastic Reusable
Initial cost	\$0.53	\$1.05	\$11.03
Estimated life (number of trips)	1	5	250
Cost per trip (avg)	\$0.53	\$0.21	\$0.04

Source: "How to Select Shipping Containers," Buckhorn, Inc., Milford, Ohio, 1991.

Case Study: Xerox Corporation

Xerox Corporation, a WasteWi\$e charter partner, has switched from a system that used thousands of different sizes of one-way shipping containers to a system that relies on nine standard reusable corrugated package sizes. The key features of Xerox's distribution system are:

- Standardized containers and long-distance supply. Xerox requires parts suppliers to use standardized containers worldwide.
- "Open-loop" network. Xerox operates an "open-loop" distribution network in which containers need not return to their points of origin, but can be used by other suppliers.
- Third-party collection. A third-party handler collects, sorts, and resells empty containers, eliminating the need to haul back containers.
- Savings. Reusable shipping containers have enabled the company to save on packaging, freight, disposal, labor, and storage costs. They also have reduced product damage.

Source: INFORM.

Another strategy is to design containers with handling and storing efficiency in mind, such as containers that fold out flat after use, allowing empties to take up a minimal amount of space. Nestability is another feature that saves space, allowing containers to be fitted inside each other after use. In addition, moving containers is easier, both full and empty, if the tops and bottoms are designed to lock into each other. This stacking efficiency makes it possible to maximize space in warehouses and delivery trucks.

Of course, switching to a new process requires careful planning and consideration. Companies will need to evaluate current operations and options for change. Where there are opportunities to increase efficiency and save money, companies will find innovative ways to work reusable containers into their operations.

To obtain a copy of the INFORM report by David Sapphire, *Delivering the Goods: Benefits of Reusable Shipping*, write to INFORM, Inc., 120 Wall Street, 16th Floor, New York, NY 10005. You can also call 212 361-2400 or FAX 212 361-2412 to order a copy. The price is \$23, which includes postage and handling.

R E S O U R C E S

FOR REDUCING TRANSPORT PACKAGING

■ **Reusable Transport Packaging Directory.** This directory, published in 1994 by the Minnesota Office of Waste Management, can help companies locate manufacturers of reusable bags, boxes, bins, totes, pails, drums, containers for liquids, pallets, slip sheets, racks, cushions, and other shipping products. In addition, the directory identifies support services for reuse and pallet reconditioning. Call 1-800-EPA-WISE to receive a copy.

■ **The National Wood Pallet and Container Association.** Wood pallets often can be repaired and refurbished for reuse instead of being thrown away. The National Wood Pallet and Container Association has compiled a comprehensive listing of pallet and container suppliers that are interested in receiving pallets for reuse as part of a materials exchange program. The Association can also help companies preserve their own pallets by rebuilding them on a company's premises so the firm can reuse them. For more information, contact the Association at 703 527-7667.

■ **The International Association of Pallet Recyclers.** Pallets also can be remanufactured or recycled. Call the International Association of Pallet Recyclers at 703 908-4880 for locations of pallet refurbishers in your state.

■ **The American Plastics Council.** Recycling stretch wrap and other plastic packaging materials can help companies avoid disposing of this material. The American Plastics Council provides information on recycling many different types of plastic and can help you locate markets in your area. If you generate a lot of stretch wrap, you might want to call the Council at 1-800-2-HELP-90 to request the publication *Stretch Wrap Recycling*.

■ **The Plastic Loosefill Council.** Many vendors ship their products using polystyrene peanuts for protection. You can reuse peanuts you receive or return them to your vendors for reuse. You might also be able to donate them to a local packaging or shipping company. If you cannot reuse the peanuts and are interested in recycling, call the Plastic Loosefill Council. The Council maintains a listing of companies that accept polystyrene peanuts for recycling. To find out if peanuts are recyclable in your area, call the Council at 1-800-828-2214.



McDonald's Gives Packaging a Break Today

McDonald's Corporation, a charter WasteWi\$e partner, has saved approximately \$5 million in 1994 by reducing packaging in the following ways:

- Reducing the raised designs on napkins, which allowed 23 percent more napkins to fit into a shipping container, and eliminated 294,000 pounds of corrugated packing boxes and 150 truckload shipments.
- Redesigning the company's shake and sundae shipment boxes, achieving a 4 percent reduction in corrugated (450,000 pounds).
- Decreasing the thickness of trash can liners, reducing plastic waste by 2.1 million pounds.
- Converting hash brown containers from paperboard cartons to paper bags, saving 2.9 million pounds of packaging.
- Redesigning french fry cartons to reduce the weight of paperboard packaging by 13 percent.



Dan River's yarn shipments arrive on reusable pallets.

Dan River Spins a Pallet Success Story

Dan River Company, Inc., a textile manufacturer and charter WasteWi\$e partner, eliminated 175 tons of corrugated per year (6,700 pounds per week) by switching to reusable packaging. This Danville, Virginia, manufacturer of sheets and comforters received weekly yarn shipments in corrugated containers. In 1994, the company converted to reusable plastic pallets, enclosed by stretch wrap. Different parts of the pallets are used about 60 to 540 times before being recycled, and only about 5 tons per year (195 pounds per week) of stretch wrap is used, all of which is recycled.



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Environmental Protection Agency
(5306W)
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